

1. A bending apparatus which moves one of upper and lower tables, and performs bending on a workpiece with tools attached to said upper and lower tables, comprising:

tool-layout information determination device for automatically or manually determining tool-layout information based on product information;

tool housing device for housing a tool group including a plurality of split tools, for each tool holder;

tool exchanging device for exchanging tool groups for each tool holder between said tool housing device, and said upper and lower tables; and

process-station formation device for splitting a tool group transferred for each tool holder from said tool housing device to said upper and lower tables through said tool exchanging device into a plurality of tool groups based on said tool-layout information from said tool-layout information determination device, thereby forming a plurality of process stations.

2. The bending apparatus according to claim 1, wherein all of said plurality of split tools have the same length.

3. The bending apparatus according to claim 2, wherein all of said plurality of split tools have a length of 5 mm.

4. The bending apparatus according to claim 1, wherein a combination and layout of split tools necessary for forming process stations predetermined based on product information are formed in a tool holder of said tool housing device.

5. The bending apparatus according to claim 4, wherein said combination and layout of split tools necessary for forming process stations are automatically or manually determined.

6. The bending apparatus according to claim 1, wherein said tool housing device is constituted by multistage racks mounted up and down on the rear face of said upper and lower tables, and said multistage racks house said plurality of split tools, for each tool holder.

7. The bending apparatus according to claim 1, wherein said tool exchanging device is constituted by holder hold members for holding a tool holder, and said holder hold members are movable frontward, backward, upward and downward between said tool housing device and said upper and lower tables.

8. The bending apparatus according to claim 1, wherein said process-station formation device comprises a separator, and said separator is movable rightward, leftward, frontward, backward, upward and downward.

9. The bending apparatus according to claim 8, wherein said separator has an arm which is rotatably mounted on an abutment of a back gauge.

10. The bending apparatus according to claim 1, wherein said process-station formation device comprises a fork-like separator, and said fork-like separator has a pair of taper claws.

11. The bending apparatus according to claim 1, wherein freely attachable/detachable tool holders are mounted to the center of said upper and lower tables, to whose both sides fixed tool holders are mounted, and holder clamp members for fixing said freely attachable/detachable tool holders are mounted in the center said upper and lower tables.

12. The bending apparatus according to claim 1, wherein tool clamp members for supporting and fixing the desired tool group are mounted in said freely attachable/detachable tool holders and said fixed tool holders.

13. A bending method in a bending apparatus which moves one of upper and lower tables, and performs bending on a workpiece with tools attached to said upper and lower tables,

forming a process station by isometric split tools based on automatically or manually determined tool-layout information, and then performing bending.

14. A bending method in a bending apparatus which moves one of upper and lower tables, and performs bending on a workpiece with tools attached to said upper and lower tables,

forming a plurality of process station by transferring for each tool holder a tool group which comprises a plurality of split tools to upper and lower tables, splitting said transferred tool group into a plurality of tool groups based on automatically or manually determined tool-layout information, and then performing bending.

15. The bending method according to claim 14, wherein all of said plurality of split tools have the same length.

16. The bending method according to claim 15, wherein all of said plurality of split tools have a length of 5 mm.

17. A bending tool in a bending apparatus which moves one of upper and lower tables, and performs bending on a workpiece with tools attached to said upper and lower tables,

provided with a groove, between a process portion and clamp portions with respect to the tool holder of the bending tool, with which tool moving and positioning device for moving and positioning the bending tool in a longitudinal direction on the tool holder can be engaged.

18. The bending tool according to claim 17, wherein said groove is tapered so that a tapered member of said tool moving and positioning device can be freely engaged therewith.

19. The bending tool according to claim 17 or 18, wherein said groove is formed on a back face of the bending tool.